

Federal Information
Processing Standards Publication ____
_____, 1970

Announcing the Standard for
COMMON BUSINESS ORIENTED LANGUAGE (COBOL)

Name of Standard. Common Business Oriented Language (COBOL), (FIPS ____).

Category of Standard. Software Standards, Programming Languages.

Explanation. This FIPS PUB announces the adoption of the American National Standard COBOL as the Federal Standard COBOL. The standard establishes the form for and the interpretation of programs expressed in COBOL for the purpose of promoting a high degree of interchangeability of such programs for use on a variety of automatic data processing systems.

Approving Authority. Bureau of the Budget.

Maintenance Agency. Department of Commerce, National Bureau of Standards (Center for Computer Sciences and Technology).

Cross Index. American National Standard X3.23-1968, COBOL.

Applicability

- a. Objectives. The basic objectives in applying the Federal Standard COBOL language are to enable programs, once written, to be used on a variety of automatic data processing systems without incurring program development costs, and to ease the operational problems and expense associated with the conversion from old to new equipment systems. From a local perspective, the use of the standard language may, in some cases, result in less efficient programs in terms of an installation's own immediate and specific requirements. From a Government-wide management point of view, however, such minor inefficiencies are acceptable and will be accommodated by local installations in order to achieve the basic and longer-range objectives of the standard language. Therefore, deviations from the prescribed uses of the standard as outlined in this FIPS PUB will be considered only where continuing and significant disadvantages are demonstrable.
- b. Relation to other programming languages. The action to adopt a Federal Standard COBOL recognizes the existence and utility of other programming languages. In essence, however, the thrust of the FIPS PUB is to prescribe the use of Federal Standard COBOL for programming

all business-oriented applications to the exclusion of other programming languages that are or may be available for the same purpose (e.g., PL/I). It is expected that other languages will, in time, be adopted as Federal standards for use in specified areas of application; for example, FORTRAN (approved by ANSI as an American standard) for scientific applications, and JOVIAL for military command and control.

- c. General application. Federal Standard COBOL will be used in programming business-oriented computer applications (i.e., those applications that emphasize the manipulation of characters, files and input/output as contrasted with those concerned primarily with the processing of numeric values) which are developed or acquired for Government use at Government expense. The standard will be used for such applications whenever

- the application is being designed and programmed centrally for a decentralized system that employs computers of different makes, models and configurations
- the program will or might possibly be run on equipment other than that for which the program is initially written
- it is anticipated that the life of the program will be longer than the life of the presently installed equipment
- the application or program is under constant review for updating of the specifications and changes may result frequently.

If any or all of these circumstances exist, other languages will not be used for programming the application, except as authorized in d below, unless a waiver is obtained in accordance with the waiver procedures. If, in the judgment of the agency, these circumstances do not exist, other languages may be used without a waiver.

- d. Exceptions authorized without a waiver.

- (1) Report generators and other file processing languages may be used in cases where it is clearly more economical and efficient to do so. Decisions to utilize these languages must, however, be made with full consideration of the Government-wide objectives stated in paragraph a above.
- (2) The standard is not applicable to applications to be processed on equipment systems of small capability for which COBOL compilers are normally not developed (e.g., System 3, NCR 390, etc.)

- (3) The standard is not applicable to applications to be processed on equipment no longer in production for which a standard COBOL compiler is not available.
- (4) Installations heavily oriented toward scientific and engineering applications and the use of FORTRAN may program incidental business-oriented applications in FORTRAN.

Specifications. Federal Standard COBOL consists of three alternative combinations of the modules specified by the American National Standard COBOL (X3.23-1968). These combinations are known as Low, Intermediate and High Level Federal Standard COBOL, respectively. Each level is defined as consisting of the high or low level nucleus and selected levels of the seven Functional Processing Modules (FPM's) of the American National Standard COBOL as follows:

	<u>Low Level</u>	<u>Intermediate Level</u>	<u>High Level</u>
Nucleus	Low (1)	High (2)	High (2)
<u>FPM</u>			
Table Handling	Low (3)	Intermediate (4)	High (5)
Sequential Access	Low (6)	High (7)	High (7)
Random Access	Low (8)	High (9)	High (9)
Sort	--	Low (10)	High (11)
Report Writer	--	--	High (13)
Segmentation	Low (14)	Low (14)	High (15)
Library	--	High (17)	High (17)

The numbers in parentheses in the above table refer to chapters in X3.23-1968, and a blank in the table denotes that the corresponding FPM is to be omitted.

Implementation Schedule. Federal Standard COBOL will be used as prescribed in the section on applicability as soon as compilers that conform to the standard specifications are available. Beginning no later than one year after the date of this FIPS PUB, all compilers brought into the Federal inventory, including those developed in-house, must be identified as implementing one of the three specified levels. The standard language will then be used in lieu of other variants of the COBOL language for programming new applications and applications undergoing major revision. It is not intended that existing programs be rewritten for the sole purpose of applying the standard. Any plans or actions to defer further the required use of the standard are subject to the waiver procedure.

Each compiler will include all the language elements of the identified level, except that a compiler acquired exclusively to produce object programs for computers without random access devices is not required to include the random access module regardless of level. Waivers are not required to invoke this exception.

A compiler which includes language elements over and above those of the identified level (whether or not they are part of the Federal COBOL Standard) is considered to be a non-standard compiler. Such a compiler will not be developed, acquired or used, unless a waiver is first obtained. If a waiver is authorized, it will stipulate that the additional elements will be included in the compiler only if they are automatically identified and flagged on the source program listing by the compiling system (i.e., compiler or preprocessor). Ordinarily, waivers will be granted only upon a clear demonstration that an appreciable and continuing performance vs. cost advantage, when considered from a Government-wide point of view, would be obtained by the use of the non-standard elements.

The decision to procure a COBOL compiler or a COBOL source program is at the discretion of the acquiring agency. This decision carries with it the responsibility for insuring vendor compliance with Federal Standard COBOL levels.

Waiver Procedure. Heads of agencies may waive the provisions of the implementation schedule.

Proposed waivers relating to the procurement of COBOL compilers will be coordinated in advance with the National Bureau of Standards. Letters should be addressed to the Director, Center for Computer Sciences and Technology, National Bureau of Standards, Washington, D.C. 20234. They should describe the nature of the waiver and set forth the reasons therefore. They should include the detailed technical specifications of the language elements affected, and a copy of the documentation considered by the head of the agency in authorizing the waiver. Language elements may be described by reference to American National Standard X3.23-1968 where appropriate.

Sixty days should be allowed for review and response by the National Bureau of Standards. The waiver is not to be made until a reply from the National Bureau of Standards is received; however, the final decision for granting the waiver is a responsibility of the agency head.

Waivers involving the use of non-standard language elements in source programs need not be coordinated with the National Bureau of Standards in advance. It is requested, however, that the National Bureau of Standards be informed of major deviations in the use of Federal Standard COBOL in new source programs together with the reasons therefore.

Where to Obtain Copies of the Specifications.

- a. Federal Government activities should obtain copies from established sources within each agency. When there is not established source, purchase orders should be submitted to the General Services Administration, Specifications Activity, Printed Materials Supply Division, Building 197, Naval Weapons Plant, Washington, D.C. 20402. Refer to Federal Information Processing Standard #___ (FIPS PUB ___), Price \$2.45 a copy.
- b. Others may obtain copies from the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018. Refer to USA Standard X3.23-1968, Standard for Common Business Oriented Language. (Price \$6.50 a copy. Discounts available on quantity orders. See ANSI Catalogue.)

USCOMM-NBS-DC

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TRANSMITTAL SLIP

15 July 1970

TO: <input type="text"/>		
ROOM NO.	BUILDING	
710	Magazine	
REMARKS:		
<p>May we have your reply to questions 1 through 5 in the attached letter from NBS relating to the draft FIPS PUB, also attached. Our single copy of the USA Standard COBOL Manual (approved 23 August 1968) has been sent to OCS & may be borrowed from <input type="text"/> if you wish. However, I believe the issue in question is fully evident in the attached FIPS draft.</p> <p>Sorry this package was inadvertently delayed in our office. The Agency is obliged to reply no later than 20 August so please forward your answers to the specific questions (in the NBS letter) to O/PPB ASAP and no later than 17 Aug 1970.</p>		
FROM: <input type="text"/> O/PPB <i>CA</i>		
ROOM NO.	BUILDING	EXTENSION
6E-25	Hq.	<input type="text"/>

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FORM NO. 241
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WHICH MAY BE USED.

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OFFICIAL ROUTING SLIP

TO	NAME AND ADDRESS	DATE	INITIALS
1	[] / SSS/DDS	JUN 29 2 54 PM '70	W
2			
3			
4	Notified [] that D/S has no		
5	comment on 7/30/70		
6			

ACTION	DIRECT REPLY	PREPARE REPLY
APPROVAL	DISPATCH	RECOMMENDATION
COMMENT	FILE	RETURN
CONCURRENCE	INFORMATION	SIGNATURE

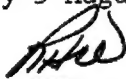
Remarks:

Bob -
 We have no basic interest in
 COBOL. Believe OCS is the primary
 user. If something comes in FORTRAN,
 OC would be more involved.

FOLD HERE TO RETURN TO SENDER

FROM: NAME, ADDRESS AND PHONE NO.	DATE

Approved For Release 2004/05/12 : CIA-RDP78-04723A000100070007-2

TO:		DATE
Chief, OC-SCD		17 JUL 1970
ROOM NO.	BUILDING	
806	Ames	
REMARKS:		
Bob:		
Could I have any comments you may		
care to make by 5 August, please?		
		
RHW		
FROM:		
Support Services Staff		
ROOM NO.	BUILDING	EXTENSION
710	Magazine	1

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